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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/350,152	07/09/1999	MICHEL GARRAIT	03806.0456	7650
22852	7590	10/03/2003		
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 1300 I STREET, NW WASHINGTON, DC 20005			EXAMINER OH, TAYLOR V	
			ART UNIT	PAPER NUMBER
			1625	

DATE MAILED: 10/03/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/350,152

Applicant(s)

GARRAIT ET AL.

Examiner

Taylor Victor Oh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 15-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **Non-final rejection**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/15/2003 has been entered.

### **The Status of Claims:**

Claims 15-34 are pending.

Claims 15-34 have been rejected.

1. The Amendment after final filed on 12/23/2002 (Paper No. 24) has been received and placed of a record in the file. Claims 16-34 has been amended.

### **Priority**

2. Acknowledgment is made of applicants' claim for foreign priority under 35 U.S.C. 119 (a)-(d). The certified copy has been filed in the application, France 98/08872 on 07/10/1998.

### **Drawings**

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3. None.

***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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6. Claims 15-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suchsland et al (U.S. 5,847,207) in view of Hsu et al (U.S. 5,856,567).

Suchsland et al discloses a process for producing 2-hydroxy-4-methylthiobutyric acid by hydrolyzing 2-hydroxy-4-methylthiobutyronitrile (MMP-CH) in the following steps:

- a. mixing 80 g 98 % sulfuric acid (0.8 mole) diluted with 40 g water (2.2 mole) with 98.6% 2-hydroxy-4-methylthiobutyronitrile (MMP-CH) (1 mole) at 50<sup>0</sup> C.,
- b. adding 75 g water (40.2 %) to the intermediate MHA amide, and
- c. heating the mixture to 100-120<sup>0</sup> C. and evaporating the resultant mixture , thereby obtaining the desired MHA product (see from col. 9, lines 48-67 to col. 10, lines 1-8).

Suchsland et al , however, differs from the instant invention in that the hydrating step (a) is carried out at a pressure range between 0.01 and 3 bar whereas the hydrating step (b) at pressure range between 0.5 and 5 bar, and the excess water is recycled and used in the hydrolyzing step (b), and the concentrated feed stream contains 50 or 80 wt. % 2-hydroxy-4-methylthiobutyronitrile (MMP-CH).

Hsu et al teaches a process for preparing 2-hydroxy-4-methylthiobutyric acid by introducing 2-hydroxy-4-methylthiobutyronitrile and an aqueous mineral acid into a nitrile hydrolysis reactor at a temperature of from 40 to 60<sup>0</sup> C. and feeding the nitrile hydrolysis reactor product stream containing the intermediate MHA amide into an amide hydrolysis flow reactor at a temperature of from 60 to 100<sup>0</sup> C. at a pressure of from 0 to 1 bar (see col. 8 , line 9).

Concerning the excess water being recycled and used in the hydrolyzing step (b), the reference is silent. However, the excess water being recycled is related to the optimization of the process. Therefore, if the skilled artisan in the art had desired to optimize the use of water, it would have been obvious for the skillful artisan in the art to have evaporated excess water in the first hydrolyzing step in order to use it in the subsequent hydrolyzing step (b), thereby facilitating the overall process.

With respect to the concentrated feed stream contains 50 or 80 wt. % 2-hydroxy-4-methylthiobutyronitrile (MMP-CH), the reference is silent. However, it is well-known in the art that the dilution in the nitrile hydrolysis reactor prevents a liquid phase separation during the process as well as precipitation of ammonium bisulfate when sulfuric acid is employed as in the reference. Therefore, it would have been obvious for the skillful artisan in the art to have evaporated excess water in the hydrolyzing step in order to facilitate the nitrile hydrolysis process.

The primary Suchsland does indicate the performance of the hydrolysis of the MHA amide in vacuum in order to obtain the pure product (see col. 11, lines 28-32), whereas the secondary Hsu et al reference does teach the performance of the nitrile hydrolysis reaction in vacuum in order to facilitate the rate of nitrile hydrolysis; furthermore, Hsu et al expressly indicates that the rate of nitrile hydrolysis can be reduced by the excess water (see col. 5, lines 53-55). Therefore, it would have been obvious to skillful artisan in the art to have motivated to incorporate Hsu et al's indirect teaching of removing water during the nitrile hydrolysis into the Suchsland process under vacuum, thereby increasing the rate of nitrile hydrolysis as well as obtaining the pure product. This is because the combined references make it possible to get the

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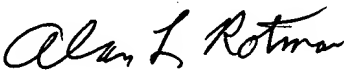
maximum benefits using the vacuum evaporation process throughout the process with an expectation of a similar success disclosed in Hsu et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 703-305-0809. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alan Rotman can be reached on 703-308-4698. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

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Taylor V Oh  
10/1/03

  
ALAN L. ROTMAN  
SUPERVISORY PATENT EXAMINER  
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